

Release notes for ENDF/B Development n-005_B_011
evaluation

ENDF
B-VII.**dev**

April 26, 2017

- fudge-4.0 Warnings:

1. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 0 (total): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.618051e-10) is too small

2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 2 ((z,n)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 3 (n[multiplicity:'2'] + B10 + gamma): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 (n + He4 + Li7 + gamma): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 5 (n + H1 + Be10 + gamma): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 7 (H1 + (Be11-s ->Be11 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 (H3 + Be9-s): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 9 (He4 + (Li8-s ->Li8 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

- fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 12: n[multiplicity:'2'] + B10 + gamma (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -11482482.32411385 eV vs -1.14541e7 eV!
2. Calculated and tabulated Q values disagree.
reaction label 13: n + H1 + Be10 + gamma (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -11255625.89227104 eV vs -1.1228e7 eV!
3. Calculated and tabulated Q values disagree.
reaction label 14: B12 + gamma (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: 3341984.130987167 eV vs 3369870. eV!
4. Calculated and tabulated Q values disagree.
reaction label 15: n + He4 + Li7 + gamma (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -9716380.460867882 eV vs -8.6637e6 eV!
5. Calculated and tabulated Q values disagree.
reaction label 16: H1 + (Be11-s ->Be11 + gamma) (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -10751701.82744789 eV vs -1.07237e7 eV!
6. Calculated and tabulated Q values disagree.
reaction label 17: H3 + Be9-s (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -9586570.750031471 eV vs -9558240. eV!
7. Calculated and tabulated Q values disagree.
reaction label 18: He4 + (Li8-s ->Li8 + gamma) (Error # 0): Q mismatch

 WARNING: Calculated and tabulated Q-values disagree: -7683765.680135727 eV vs -6630950. eV!
8. Energy range of data set does not match cross section range
production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

 WARNING: Domain doesn't match the cross section domain: (10027000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
9. Energy range of data set does not match cross section range
production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_a
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

 WARNING: Domain doesn't match the cross section domain: (9737500.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
10. Energy range of data set does not match cross section range
production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_b
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

 WARNING: Domain doesn't match the cross section domain: (9344600.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
11. Energy range of data set does not match cross section range
production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_c
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

- WARNING: Domain doesn't match the cross section domain: (8708800.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
12. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_d
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7953000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 13. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_e
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7414100.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 14. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_f
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7360700.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 15. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_g
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (9344600.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 16. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_h
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (8708800.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 17. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_i
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (5480270.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 18. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_j
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (10027000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 19. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_k
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7414100.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

 20. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_l
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (9737500.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

21. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_m
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (4852130.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
22. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_n
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (9344600.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
23. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_o
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (9344600.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
24. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_p
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (5480270.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
25. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_q
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7953000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
26. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_r
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (10027000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
27. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_s
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7360700.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
28. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_t
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7953000.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)
29. Energy range of data set does not match cross section range
*production label 19: /reactionSuite/reactions/production[@label='19'] / Product: gamma_v
/ Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (7414100.0 -> 20000000.0) vs (2319350.0 -> 20000000.0)

30. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 4: n + He4 + Li7 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 66577.20%

31. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 5: (z,p) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 253.94%

32. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 6: (z,alpha) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 1084305.58%

• njoy2012 Warnings:

1. This nuclide has no URR and NJOY is upset about it
unresr...calculation of unresolved resonance cross sections (0): No URR

---message from unresr---mat 528 has no resonance parameters
 copy as is to nout

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (0): HEATR/hinit (4)

---message from hinit---mf6, mt 16 does not give recoil za= 5010
 one-particle recoil approx. used.

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

---message from hinit---mf6, mt 22 does not give recoil za= 3007
 one-particle recoil approx. used.

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

---message from hinit---mf6, mt 28 does not give recoil za= 4010
 one-particle recoil approx. used.

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

---message from hinit---mf6, mt 91 does not give recoil za= 5011
 one-particle recoil approx. used.

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

---message from hinit---mf6, mt103 does not give recoil za= 4011
 one-particle recoil approx. used.

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)
- ```
---message from hinit---mf6, mt107 does not give recoil za= 3008
one-particle recoil approx. used.
```
8. This nuclide has no URR and NJOY is upset about it  
*purrr...probabalistic unresolved calculation (0): No URR*
- ```
---message from purrr---mat 528 has no resonance parameters
copy as is to nout
```
9. Coefficient mismatch of some sort
covr...process covariance data (1): COVR/matshd (2)
- ```
---message from matshd---processing of mat/mt 528/ 2 vs. mat1/mt1 528/107
largest coefficient= -3.18267E+00 at index 538 518
```
10. The number of coefficients is too big.  
*covr...process covariance data (2): COVR/matshd (3)*
- ```
---message from matshd--- 4 coefficients > 1
reset and continue.
```
11. The number of coefficients is too big.
covr...process covariance data (3): COVR/matshd (3)
- ```
---message from matshd--- 3 coefficients > 2
reset and continue
```
12. The number of coefficients is too big.  
*covr...process covariance data (4): COVR/matshd (3)*
- ```
---message from matshd--- 48 coefficients > 2
reset and continue
```
13. Coefficient mismatch of some sort
covr...process covariance data (5): COVR/matshd (2)
- ```
---message from matshd---processing of mat/mt 528/105 vs. mat1/mt1 528/105
largest coefficient= 3.79049E+01 at index 542 546
```
14. The number of coefficients is too big.  
*covr...process covariance data (6): COVR/matshd (3)*
- ```
---message from matshd--- 4 coefficients > 1
reset and continue.
```
15. The number of coefficients is too big.
covr...process covariance data (7): COVR/matshd (3)
- ```
---message from matshd--- 40 coefficients > 2
reset and continue
```
16. The number of coefficients is too big.  
*covr...process covariance data (8): COVR/matshd (3)*

```
---message from matshd--- 40 coefficients > 2
reset and continue
```